

IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended) A communication path control method in a communication network comprising a first and second communication equipment connected to through a plurality of communication networks belonging to different telecommunication companies' networks, a network controller connected to each of said first and second communication equipment for selectively setting private communication paths on said communication networks, and a server for supplying network control information instructing said network controller to set a private communication path on one of said communication networks to said network controller, said network controller selectively supplying communication path control information generated based on the basis of said network control information to said first and second communication equipment, said communication path control method comprising the steps of:

storing a plurality of information entries each indicative of definition of a communication path and communication services service provided by each of said telecommunication companies' through said communication networks into said server;

issuing receiving, by said server, a communication service request issued from a user terminal connected to one of said first and second communication equipment, in which said communication service request designating specifications of

a private communication path to be assured secured for a the user terminal connected to said communication equipment are designated, from the user terminal to said server;

retrieving, by said server, at least one an information entry of the defining a communication path and communication service that matches definition matched with said communication service request, specifying a communication path defined by the retrieved information entry as an available path for the user terminal if the communication path can satisfy said communication service request, and specifying a combination of communication paths defined by at least two information entries as the available path if no single information entry matches said communication service request and the combination of communication paths can satisfy said communication service request; and

notifying said user terminal of a search result information as to the available path by said server; and

transmitting network control information generated based on the basis of said communication service request and retrieved communication service the definition information of said available path definition from said server to said network controller in response to a notification of agreement to the available path from said user terminal to said search result, thereby securing for the user terminal at least one communication path between said first and second communication equipment as the private communication path.

Claim 2 (canceled).

3. (currently amended)The communication path control method according to claim 1, wherein each of said information entries includes, as said definition of said communication service, definition includes information indicative of bandwidth of the communication path provided by each telecommunication company's networkavailable on the communication network.

4. (currently amended)The communication path control method according to claim 1, wherein each of said information entries includes, as said definition of said communication service, definition includes information indicative of quality of communication service provided by each telecommunication company's networkavailable on the communication network.

5. (currently amended)The communication path control method according to claim 13, wherein said communication service request includes information indicative of bandwidth of a private communication path to be assured secured for a user terminal.

6. (currently amended)The communication path control method according to claim 14, wherein said communication service request includes information indicative of quality of communication service on a private communication path to be assured secured for a user terminal.

7. (currently amended)The communication path control method according to claim 1, wherein said communication service request includes information indicating whether a backup private communication path should be assured secured for a-the user terminal or not.

8. (currently amended)A communication service request processing method for a communication network including first and second a communication equipment connected tothrough a plurality of telecommunication companies'communication networks belonging to different communication service providers, and a network controller connected to each of said communication equipment, said communication service request processing method comprising the steps of:

transmitting information indicative of definition of communication service to be offered between said first and second communication equipment by each of said communication service providers from aeach of management terminal terminals of each associated with said telecommunication company's network communication service providers to an assistant server connected to said network controller;

storing said information indicative of definition of communication communication service definition information received from each of said management terminal terminals as a supplyan information entry of a communication service definition by said assistant server;

issuing receiving, by said assistant server, a communication service request issued from a user terminal connected to one of said first and second communication

equipment, in which said communication service request designating specifications of a requested communication path service to be assured secured for a the user terminal connected to said communication equipment are designated, from the user terminal to said assistant server;

retrieving, by said assistant server, an at least one information entry of the communication service definition matched with said requested communication service, request specifying communication service defined by the retrieved information entry as an available communication service for the user terminal if the communication service definition can satisfy the requested communication service, and specifying a combination of communication service defined by at least two information entries as the available communication service if no single information entry matches with requested communication service and the combination of communication service can satisfy the requested communication service;

notifying said user terminal of a search result information as to the available communication service by said assistant server;

after receiving, by said assistant server, a notification of agreement to the available communication service from said user terminal to said search result;

transmitting network control information for establishing a to secure for said user terminal the available communication path service designated by said communication service request from said assistant server to said network controller; and

supplying communication path equipment control information generated based on the basis of said network control information from said network controller to

said communication equipment, thereby to secure for said requested communication service a part of at least one communication path between said first and second communication equipment.

Claim 9 (canceled).

10. (currently amended)The communication service request processing method according to claim 8, wherein the network control information transmitted from said assistant server to said network controller includes routing control information to be used by a telecommunication company's network in which said communication path is setbetween said first and second communication equipment,
~~— said path control information is informed from said network controller to a network controller of said telecommunication company's network, and~~
~~wherein when one of said first and second communication equipment establishes~~secures for said user terminal a part of at least one communication path based on the basis of communication path control information supplied from said network controller, and when a packet is received from said user terminal, said the one of said first and second communication equipment adds said routing control information to the received packet and transmits the packet to said the secured communication path.

11. (currently amended)A server for performing communication with a user terminal via a communication network and supplying network control information to a

network controller for controlling a communication node connected to both said user terminal and a plurality of telecommunication companies' communication networks belonging to different communication service providers, said server comprising:

memory means for storing a plurality of information entries each indicative of a definition of communication service and a communication path on the communication network provided by each of said telecommunication companies' networkscommunication service providers;

first means for searching, upon receiving from the user terminal a communication service request in which specifications of a private communication path to be assuredsecured for athe user terminal are designated, from the user terminal, searching said memory means for an information entry indicative of communication service definitionand a communication path that matches matched with said communication service request, specifying a communication path defined by the retrieved information entry as an available path for the user terminal if the communication path can satisfy said communication service request, specifying a combination of communication paths defined by at least two information entries as the available path if no single information entry matches said communication service request and the combination of communication paths can satisfy said communication service request, and notifying said user terminal of a search resultinformation as to the available path; and

second means for transmitting network control information generated based on the basis of said communication service request and the retrieved communication service definitioninformation of said available path to said network controller in

response to a notification of agreement to said available path from said user terminal to said search result,

wherein said network controller instructs said communication node, in response to the network control information received from said server, to establish secure a-at least one communication path so that transmission for transferring packets received from said user terminal are transferred to another communication node through the communication path a telecommunication company's network which provides satisfies communication service definition matched with said communication service request.

Claim 12 (canceled).

13. (currently amended) The server according to claim 11, wherein each of information entries stored in said memory means includes, as a part of said definition of communication service definition information, information indicative of bandwidth of a-the communication path provided by each telecommunication company's network,

wherein said communication service request designates the bandwidth of a said private communication path to be assuredsecured, and

wherein said first means searches said memory means for an information entry including the definition of communication service definition matched with a-the bandwidth designated by said communication service request.

14. (currently amended) The server according to claim 11, wherein each of information entries stored in said memory means includes, as a part of said definition of communication service definition information, information indicative of the quality of communication service provided by each telecommunication company's network on said communication path,

wherein said communication service request designates the quality of communication service on a the private communication path to be assured secured, and

wherein said first means searches said memory means for an information entry including the definition of communication service definition matched with the quality of communication service designated by said communication service request.

15. (new) The communication path control method according to claim 1, wherein each of said information entries includes a communication bandwidth available on the communication path,

wherein said communication service request designates a bandwidth of the private communication path requested by said user terminal, and

wherein said server selects, when no single information entry that matches said communication service request is found, a combination of communication paths defined by at least two information entries as the available path if the total communication bandwidths available by the combination of communication paths satisfies the requested bandwidth.

16. (new) The communication service request processing method according to claim 8, wherein each of said information entries includes a communication bandwidth available in the communication service, wherein said communication service request designates a bandwidth required for the requested communication service, and wherein said assistant server selects, when no single information entry that matches said communication service request is found, a combination of communication paths defined by at least two information entries as the available path if the total communication bandwidths available by the combination of communication paths can satisfy the bandwidth required for the requested communication service.

17. (new) The server according to claim 11, wherein each of said information entries includes a communication bandwidth available in the communication service, wherein said communication service request designates a bandwidth required for the requested communication service, and wherein said first means selects, when no single information entry that matches said communication service request is found, a combination of communication paths defined by at least two information entries as the available path if the total communication bandwidths available by the combination of communication paths can satisfy the bandwidth required for the requested communication service.